We Claim:

1. A method of modulating a steroid receptor or process mediated by a steroid receptor in a cell by administering a polypyridimine tract binding protein-associated splicing factor (PSF) polypeptide, a polynucleotide encoding a PSF polypeptide (PSF Polynucleotide), an isolated complex of a PSF polypeptide and a steroid receptor (PSF Complex), and/or an agonist or antagonist thereof, in an effective amount to modulate the steroid receptor or process.

2. A method of claim 1 wherein the effective amount modulates binding of the steroid receptor to a hormone response element in the cell.

3. A method of claim 1 wherein the process involves suppression of the genes required for myometrial activation and the onset of labor.

4. A method of claim 1 wherein an effective amount of a PSF Polypeptide, a PSF Polynucleotide, a PSF Complex, and/or an agonist or antagonist thereof, is administered to a patient having a condition mediated by a steroid receptor.

5. A method of claim 1 wherein transactivation of the steroid receptor is co-repressed in the cell by administering a PSF Polypeptide, a PSF Polynucleotide, and/or a PSF Complex, and/or an agonist thereof.

6. A method of claim 1 wherein steroid receptor transactivation in a cell is stimulated or enhanced by administering to the cell an antagonist of a PSF Polypeptide, a PSF Polynucleotide, and/or a PSF Complex.

7. A method of inhibiting transactivation domains of a steroid receptor in a cell comprising administering to the cell a PSF Polypeptide, a PSF Polynucleotide, a PSF Complex, and/ or an agonist thereof.

8. A method of stimulating transactivation domains of a steroid receptor in a cell comprising administering to the cell an antagonist of a PSF Polypeptide, a PSF Polynucleotide, and/or a PSF Complex.

9. A method of claim 1 wherein a steroid signal transduction pathway, degradation of the steroid receptor, recruitment of HDAC protein complexes, and/or steroid receptor binding with DNA in the cell are modulated.

10. A method of claim 1 wherein steroid receptor signaling is repressed and the effective amount is an amount effective to inhibit the binding of a DNA binding domain of an activated steroid receptor to a hormone response element.

11. A method of claim 1 wherein steroid receptor signaling is stimulated or increased and the effective amount is an amount effective to stimulate or increase binding of a DNA binding domain of an activated steroid receptor to a hormone response element.

12. A method of claim 10 or 11 wherein the steroid receptor is progesterone and the hormone response element is progesterone response element.

13. A method for treating a subject or individual having a condition mediated by a steroid receptor, or characterized by an abnormality in a steroid receptor signal transduction pathway, and/or an abnormal

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level of interaction between a PSF Polypeptide and a steroid receptor, comprising disrupting or promoting the interaction in cells or inhibiting or promoting the activity of a PSF Complex.

14.   A method for preventing or treating a condition mediated by a steroid receptor in a subject comprising administering a PSF Polypeptide, a PSF Polynucleotide, a PSF Complex, and/or an agonist or antagonist thereof.

15.   A method of claim 13 or 14 wherein the condition is labor.

16.   A method of claim 13 or 14 wherein the condition is cancer.

17.   A method for identifying a substance that modulates a steroid receptor, a PSF Polypeptide, a PSF Complex, a process mediated by a steroid receptor, degradation of a steroid receptor, a steroid receptor signaling transduction pathway, a condition mediated by a steroid receptor, steroid receptor transactivation, and/or inhibits or potentiates the interaction of a steroid receptor and a PSF Polypeptide, comprising assaying for a substance that inhibits or stimulates a PSF Polypeptide, a PSF Polynucleotide, or PSF Complex.

18.   A method of claim 17 for evaluating a substance for its ability to regulate the onset of labor comprising the steps of:

(a)   reacting a PSF Polypeptide and a progesterone receptor and a test substance, wherein the PSF Polypeptide and receptor bind to form a complex; and

(b)   comparing to a control in the absence of the substance to determine if the substance stimulates or inhibits the binding of the PSF Polypeptide to the receptor and thereby regulates the onset of labor.

19.   A cell based assay for identifying a substance that modulates steroid receptor transactivation, comprising (a) introducing into cells a steroid receptor, a PSF Polypeptide, a test compound and a steroid responsive promoter operably linked to a gene encoding a detectable substance, in the presence of a steroid, and (b) assaying for an increase in inhibition of steroid receptor transactivation of the promoter by the PSF Polypeptide, or a decrease in inhibitory effects of a PSF Polypeptide resulting in transactivation of the promoter, by detecting the detectable substance.

20.   A method of conducting a drug discovery business comprising:

(a)   providing a method for identifying a substance as claimed in claim 18 or 19;

(b)   conducting therapeutic profiling of substances identified in step (a), or further analogs thereof, for efficacy and toxicity in animals; and

(c)   formulating a pharmaceutical preparation including one or more substances identified in step (b) as having an acceptable therapeutic profile.

21.   A method of any preceding claim wherein the steroid receptor is a progesterone receptor, a glucocorticoid receptor, or an androgen receptor.

22.   A method of any preceding claim wherein the PSF polypeptide comprises a sequence of SEQ ID NOs. 1, 2, 3, 4, 5, 6, or 21, or part thereof.

23.   A method of claim 22 wherein a part of a PSF Polypeptide consists of a binding domain of the polypeptide that interacts with a steroid receptor, preferably the part is a RRMII domain, a polypeptide consisting of amino acids 1-150, amino acids 290-370, or amino acids 1-662 of SEQ ID NO. 1

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24.   A method of any preceding claim wherein the steroid receptor is progesterone receptor comprising SEQ ID NOs. 10, 11, 12, 13, 14, or 15, or SEQ ID NO. 10 with amino acids 1 to 164 missing, or parts thereof.

25.   A method of claim 24 wherein a part of a progesterone receptor consists of a binding domain of the polypeptide that interacts with a PSF Polypeptide, preferably a DBD domain or a AF3 domain, a polypeptide consisting of amino acids 1-164 of SEQ ID NO. 10, amino acids 456-650 of SEQ ID NO. 10, amino acids 567-587 of SEQ ID NO. 10, or amino acids 556 to 933 of SEQ ID NO. 10.

26.   A method for regulating the onset of labor in a subject comprising inhibiting or stimulating a PSF Polypeptide, PSF Polynucleotide, a complex of a PSF Polypeptide and a progesterone receptor (PSF-PR Complex), or interaction between a PSF Polypeptide and a PR Polypeptide.

27.   A method of claim 26 wherein the onset of labor is delayed in a subject

28.   A method of claim 26 wherein the method controls pre-term labor sufficiently to extend pregnancy in a subject to as close to full term as possible.

29.   A method of preventing and/or treating pre-term labor comprising modulating a PSF Polypeptide and/or a complex of a PSF Polypeptide and a progesterone receptor (PSF-PR Complex) in a subject.

30.   A method of claim 26 wherein the method prevents premature labor in a subject susceptible thereto and comprises administering a labor preventive amount of an antagonist or inhibitor of a PSF Polypeptide, PSF-PR Complex, and/or PSF Polynucleotide to the subject.

31.   A method of claim 26 wherein a female suffering from, or who may be susceptible to pre-term labor is treated by administering therapeutically effective dosages of an antagonist or inhibitor of a PSF Polypeptide, PSF-PR Complex, and/or PSF Polynucleotide.

32.   A method of claim 31 wherein a therapeutically effective dosage is an amount of an antagonist or inhibitor of a PSF Polypeptide, PSF-PR Complex, and/or PSF Polynucleotide effective to maintain progesterone receptor levels or functional activity thus inhibiting the onset of labor.

33.   A method of claim 26 wherein the method stops labor preparatory to Cesarean delivery in a subject.

34.   A method of inhibiting a progesterone receptor to thereby remove the suppressive action of the progesterone receptor on the expression of myometrial genes required for labor comprising administering an effective amount of an antagonist or inhibitor of a PSF Polypeptide, PSF Polynucleotide, and/or PSF-PR Complex.

35.   A method for controlling the timing of parturition in animals comprising administering an antagonist of a PSF Polypeptide, PSF-PR Complex, and/or PSF Polynucleotide to the animal on the evening before the expected delivery to delay parturition so that the delivery occurs during the daylight hours

36.   A method for initiation of farrowing of pregnant domestic animals within a predictable number of hours comprising administration of an antagonist of a PSF Polypeptide, PSF Polynucleotide, and/or PSF-PR Complex to a pregnant animal.

37.   A method of any preceding claim wherein the antagonist is an antibody specific for a PSF Polypeptide or PSF Complex.

38.   A method for inducing labor in a subject comprising administering therapeutically effective dosages of a PSF Polypeptide, PSF Polynucleotide, PSF Complex, and/or an agonist thereof.

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39.   A method for identifying pre-term labor or the onset of labor in a subject comprising detecting a PSF Polypeptide, PSF Polynucleotide, and/or PSF Complex in a sample from the subject.

40.   A method of claim 39 for diagnosing in a subject a condition requiring regulation of the onset of labor comprising detecting a PSF Polypeptide in a sample from the subject.

41.   A method of claim 39 for diagnosing increased risk of pre-term labor in a subject comprising detecting a PSF Polypeptide in a sample from the subject.

42.   A method of claim 39, 40, or 41 which comprises (a) collecting a sample from the subject; (b) measuring the levels of PSF Polypeptide in the sample; and (c) comparing the levels of PSF Polypeptide in the sample to the levels in subjects with normal pregnancies.

43.   A method of claim 42 wherein significantly increased levels in the sample compared to levels in samples from subjects who do not suffer from pre-term labor is indicative of an increased risk of pre-term labor.

44.   A pharmaceutical composition adapted for administration to a subject for the prevention or treatment of a condition mediated by a steroid receptor comprising an effective amount of a PSF Polypeptide, PSF Complex, and/or PSF Polynucleotide, or an agonist or antagonist thereof, or an agent, compound or substance identified using a method of any preceding claim, and a pharmaceutically acceptable carrier, diluent or excipient.

45.   A pharmaceutical composition of claim 44 wherein the amount is effective to modulate a steroid receptor, a PSF Polypeptide, a PSF Complex, a process mediated by a steroid receptor, degradation of a steroid receptor, a steroid receptor signal transduction pathway, and/or steroid receptor transactivation, and/or inhibit or potentiate the interaction of a PSF Polypeptide and a steroid receptor.

46.   A pharmaceutical composition of claim 44 or 45 wherein the steroid receptor is progesterone receptor.

47.   A pharmaceutical composition of claim 46 comprising an effective amount of an antagonist of a PSF Polypeptide, PSF Complex, PSF Polynucleotide for treating a subject suffering from, or who may be susceptible to pre-term labor.

48.   A pharmaceutical composition of claim 46 comprising an effective amount of a PSF Polypeptide, PSF Complex, PSF Polynucleotide, and/or an agonist thereof for inducing labor in a subject.

49.   Use of a PSF Polypeptide, PSF Polynucleotide, and/or PSF Complex, or agonist or antagonist thereof, for the manufacture of, or in the preparation of a medicament to modulate a steroid receptor, a PSF Polypeptide, a PSF Complex, a process mediated by a steroid receptor, degradation of a steroid receptor, a steroid receptor signal transduction pathway, and/or steroid receptor transactivation, and/or inhibit or potentiate the interaction of a PSF Polypeptide and a steroid receptor.

50.   Use of claim 49 wherein the medicament is applied to the prevention or treatment of a condition mediated by a progesterone receptor.

51.   Use of claim 50 wherein the medicament comprises an antagonist or inhibitor of a PSF Polypeptide, PSF Polynucleotide and/or PSF-PR Complex useful in modulating the onset of labor.

52.   Use of claim 50 wherein the medicament is useful for preventing pre-term or premature labor, reducing the risk of pre-term or premature labor, stopping labor preparatory to Cesarean delivery, or controlling the timing of parturition in animals, such as domestic animals.

53.   A kit for carrying out a method of any preceding claim.

54.   An isolated complex comprising a PSF polypeptide and a progesterone receptor.